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Winds of change evident in Holland

By John McQuaid, Staff writer

KINDERDIJK, NETHERLANDS -- Once a mainstay of water management strategies, windmills are national icons in the Netherlands, and, yes, the country still uses them intermittently to pump water.

Its 19 working windmills make Kinderdijk a living museum, one that shows how the Netherlands' flood control technology steadily advanced over the centuries. As inhabitants struggled to contend with sinking land surrounded by water, their efforts gradually transformed sodden peat bogs into dry, pleasant expanses of green.

In the Middle Ages, settlers built dams and sluices in the peat bogs near the River Lek to create living space.

In 1366, sinking land forced residents to build reservoirs to hold water that could not easily drain into nearby rivers. After 1400, the people started building windmills to pump water into the reservoirs. But subsidence continued, and around 1500 they built two new, larger catchment basins nearby.

After a flood in the early 1700s, 16 windmills were built to keep the area continuously dry. Their pumping power let residents divert a much higher level of water into the reservoirs. From there, it would drain into the river -- even when the river was high.

Lined up along the narrow reservoirs, the windmills are a majestic sight. The huge sails on the operating mills reach almost to the ground, gyrating fast enough to pose a mortal danger to anyone careless enough to walk under them. Between the wind-driven sails, the wooden gears and the scoop wheel, a windmill is a noisy place.

In 1868, two steam-driven pump stations took over, pumping water directly into the Lek using giant screws. A single pump could move more water higher and faster than any windmill. Modern pumps took their place the 20th century.

But modern technology has its limits. When diesel shortages halted pump station operations in World War II, the windmills were pressed into service again to keep Kinderdijk dry. Today, they come on line during floods to supplement the motor-driven pumps.